The Monitor

The Newsletter of the ETV Advanced Monitoring Systems (AMS) Center

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EPA's William Maxwell (above) and Jeffrey Ryan (at left in right photo) described and demonstrated mercury CEMs at the field day.

Mercury CEMs Test Fits Current Regulatory Priority

For Additional Information…

Mercury is a naturally occurring element present throughout the environment. In the U.S., coal-fired power plants are the biggest sources of mercury emissions to the air. Coal- and oil-fired power plants emit about 50 tons of mercury a year into the atmosphere. When mercury from the air is deposited in oceans, lakes, rivers, and streams, biological processes transform it into a toxic form that builds up in fish. People are exposed to mercury primarily by eating fish.

Exposure to mercury has been associated with both neurological and developmental damage in humans. Currently, 40 states have warned residents to restrict their consumption of

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Three companies preparing to start the verification test of four mercury continuous emission monitors (CEMs) were in the spotlight at the Technology Field Day, which was held January 12 at the U.S. Environmental Protection Agency's Environmental Research Center (ERC) in Research Triangle Park, NC.

More than 60 people attending the Technology Field Day toured the test site at EPA's Rotary Kiln Incinerator Simulator (RKIS), which is located at the ERC, a part of EPA's National Risk Management Research Laboratory in the Office of Research and Development. Those attending included regulatory officials from seven states, representatives of private companies, news media staff, and other stakeholders interested in learning about commercially ready mercury monitors.

CEMs for mercury are designed to measure mercury emissions from coal-fired power plants, incinerators, and other facilities on a continuous basis, providing real-time emissions data that can be used by utilities and other companies in making technology selections to reduce toxic emissions.

The event launched the two-week verification test of mercury CEMs being conducted by the Advanced Monitoring Systems Center, managed by Battelle, a partner with EPA's Environmental Technology Verification Program (ETV). The participating vendors are Nippon Instruments Corp. (two instruments), Osaka, Japan; Ohio Lumex Co., Inc., Cleveland, OH; and P.S. Analytical, Ltd., Kent, England.

The test is designed to evaluate the performance of the mercury monitors, in part by comparing them to reference measurements. During the first week of the test, the instruments monitor emissions similar to those from a coal-fired

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The AMS Center is part of the U.S. Environmental Protection Agency's Environmental Technology Verification Program. ETV was established to accelerate the development and commercialization of improved environmental technologies through third-party verification testing and reporting of the technologies' performance. The ETV process provides purchasers and permitters with an independent assessment of the technology they are buying or permitting and facilitates multi-state acceptance. For further information, contact Helen Latham at Battelle, 505 King Ave., Columbus, Ohio 43201-2693; Phone 614-424-4062; Fax 614-424-5601; E-mail lathamh@battelle.org.

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certain fish because of mercury contamination. Northeastern and Great Lakes states are at higher risk because of their proximity to water bodies and to mercury emission sources.

In July 2000, the National Research Council of the National Academy of Sciences released a report concluding that mercury is widespread and persistent in the environment and that guidelines by the EPA establishing maximum exposure levels are scientifically justifiable for the protection of public health. The report also stated that mercury exposure may cause neurological problems in 60,000 children born in the U.S. each year. See http://www.nationalacademies.org/nrc.

In January 2001, EPA issued an advisory about the risk associated with mercury in fish and recommended that women who are pregnant or may become pregnant, nursing mothers and young children limit fish consumption. See http://www.epa.gov/ost/fish.

The U.S. Food and Drug Administration (FDA) also issued an advisory regarding potential risk to these vulnerable populations of consuming fish containing high levels of mercury. See http://www.fda.gov.

In September 2000, the New England Governors' Conference (NEGC) adopted a resolution to virtually eliminate mercury releases into the environment, and prepared an action plan. The NEGC stated it is well on the way to meet its goal to reduce the release of mercury by 50 percent by 2003. Three New England states are supplementing NEGC's action plan.

The North American Commission for Environmental Cooperation–comprised of representatives of the governments of Canada, Mexico, and the United States–was established to address environmental issues in North America from a continental perspective. The three nations formed the North American Task Force on Mercury in 1999, with the goal of preventing or minimizing releases of mercury from major sources in each nation.

"Mercury is the last major toxic substance without an emissions control plan…Congress needs to act in the public's interest and to stop doing the bidding of the special interests," said Vermont Sen. Patrick Leahy, a sponsor of legislation to require a 95 percent reduction of mercury releases from coal-burning power plants.

Mercury CEMs *(continued from page 1)*

power plant. In the second week, the instruments are tested with gas simulating emissions from a municipal waste incinerator.

On December 14, 2000, EPA announced it will require the reduction of mercury emissions from coal-fired power plants, the largest source of such emissions in America after determining such emissions pose significant hazards to public health. Final mercury reduction regulations are expected to be issued in 2004. See http://www.epa.gov/mercury.

William Maxwell, an environmental engineer in the Emissions Standards Division's Combustion Group of EPA's Office of Air Quality Planning and Standards, stressed the importance of mercury CEMs in monitoring emissions from power plants and other facilities. "These monitors are not required by current regulations," he said, "but they may be, as EPA establishes new regulations for electric utilities and revises current regulations for other source categories."

Penelope Hansen, director of the ETV Program, agreed that the verification test for mercury CEMs was very timely, given EPA's focus on regulations to reduce mercury emissions. "EPA's Environmental Technology Verification Program was established to accelerate private sector acceptance and use of improved environmental technologies," Ms. Hansen said, "and this is an excellent example of how that program can work."

Mark Smith, who represented the Massachusetts Department of Environmental Protection (DEP), cited the collaborative efforts of the New England governors and eastern Canadian provinces to reduce and control mercury emissions. The Massachusetts DEP co-funded the mercury CEMs verification test.

Upcoming Events

March 2001

4-9–PittCon 2001, New Orleans, LA.
19-20–AMS Center's air stakeholder committee meeting, Santa Fe, NM.
26-27–AMS Center's water stakeholder committee meeting, Pacific Grove, CA.